

660760" FID-6E60

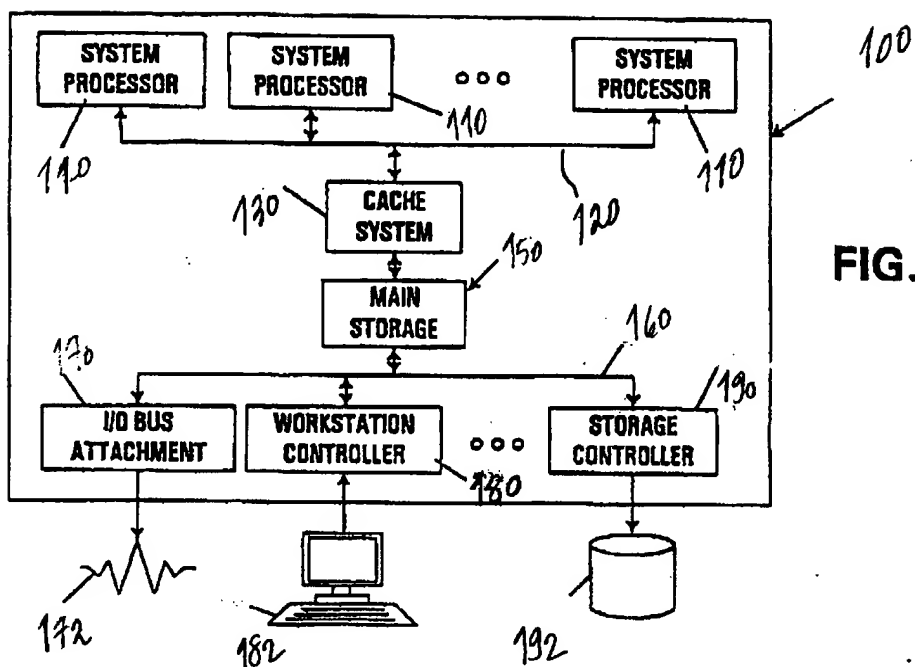


FIG. 1

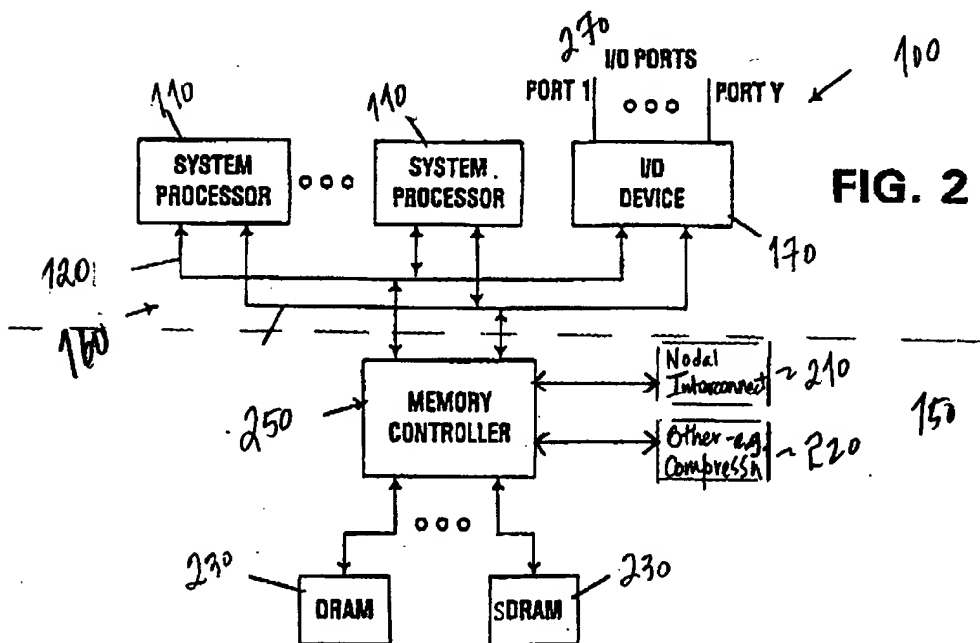
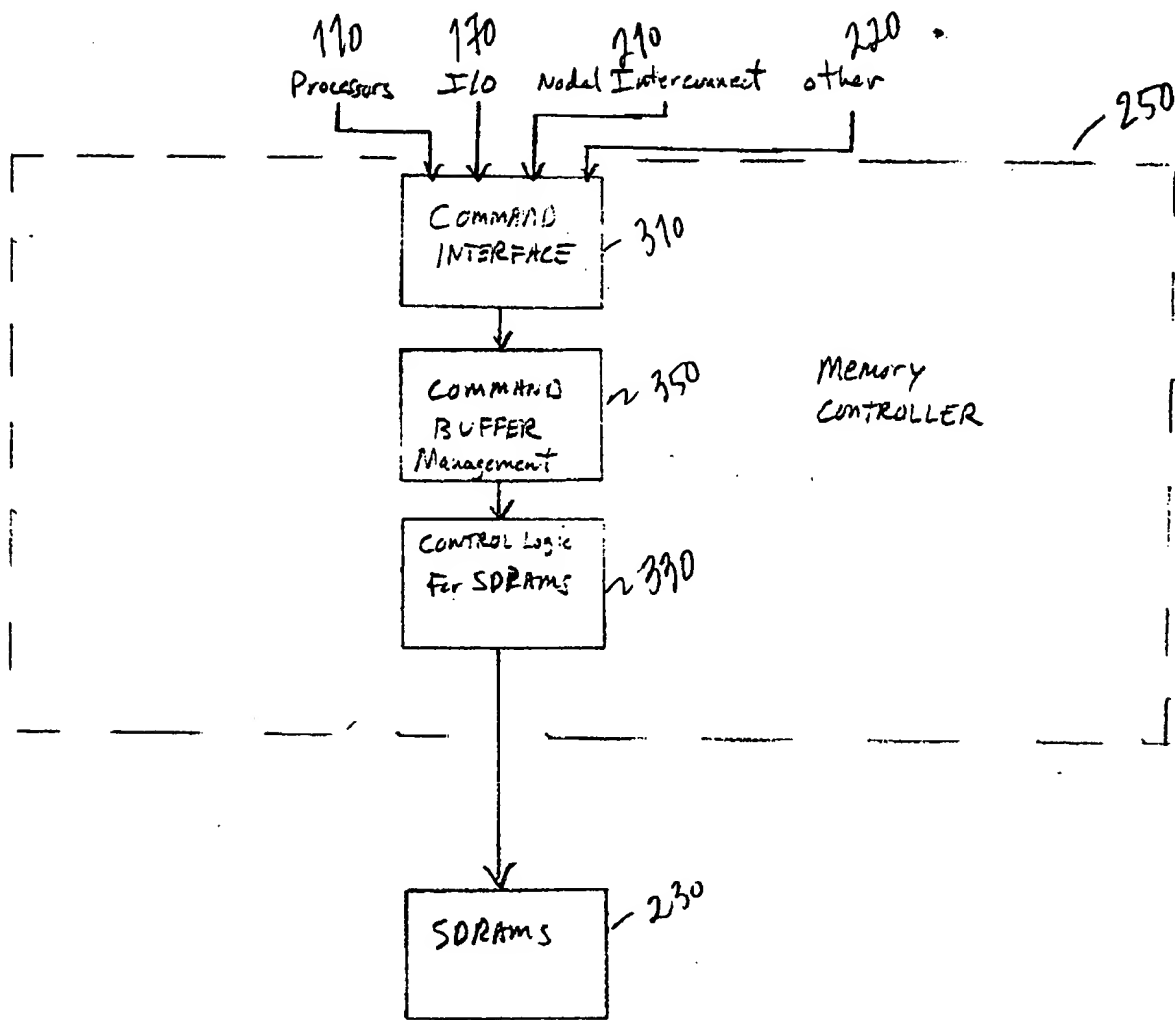


FIG. 2

R0999-080
Figures 1, 2



650T60" TFOHE60

RO999-080
Figure 3

From Command Interface

350 ②

COMMAND
BUFFER
Management

410

Receive Command
from
Command Interface

412

Calculate ReOrder
INFORMATION
SAVE WITH COMMAND
(CS, IS, cmd, bus)

414

Determine if address
Dependency on ANY
Previous Received
COMMANDS

SAVE WITH COMMAND

416

Categorize by type
(Fetch, Store, Intervention)

418

450

Command
FIFO and
ReOrder
Logic
(Fetch)

450

Command
FIFO and
ReOrder
Logic
(Store)

450

Command
FIFO and
ReOrder
Logic
(Intervention)

Chosen
Command
Register

Chosen
Command
Register

Chosen
Command
Register

Previous
Chosen
COMMANDS

Previous
Chosen
COMMANDS

Previous
Chosen
COMMANDS

458

458

458

Arbitration Logic and Flush Function

460

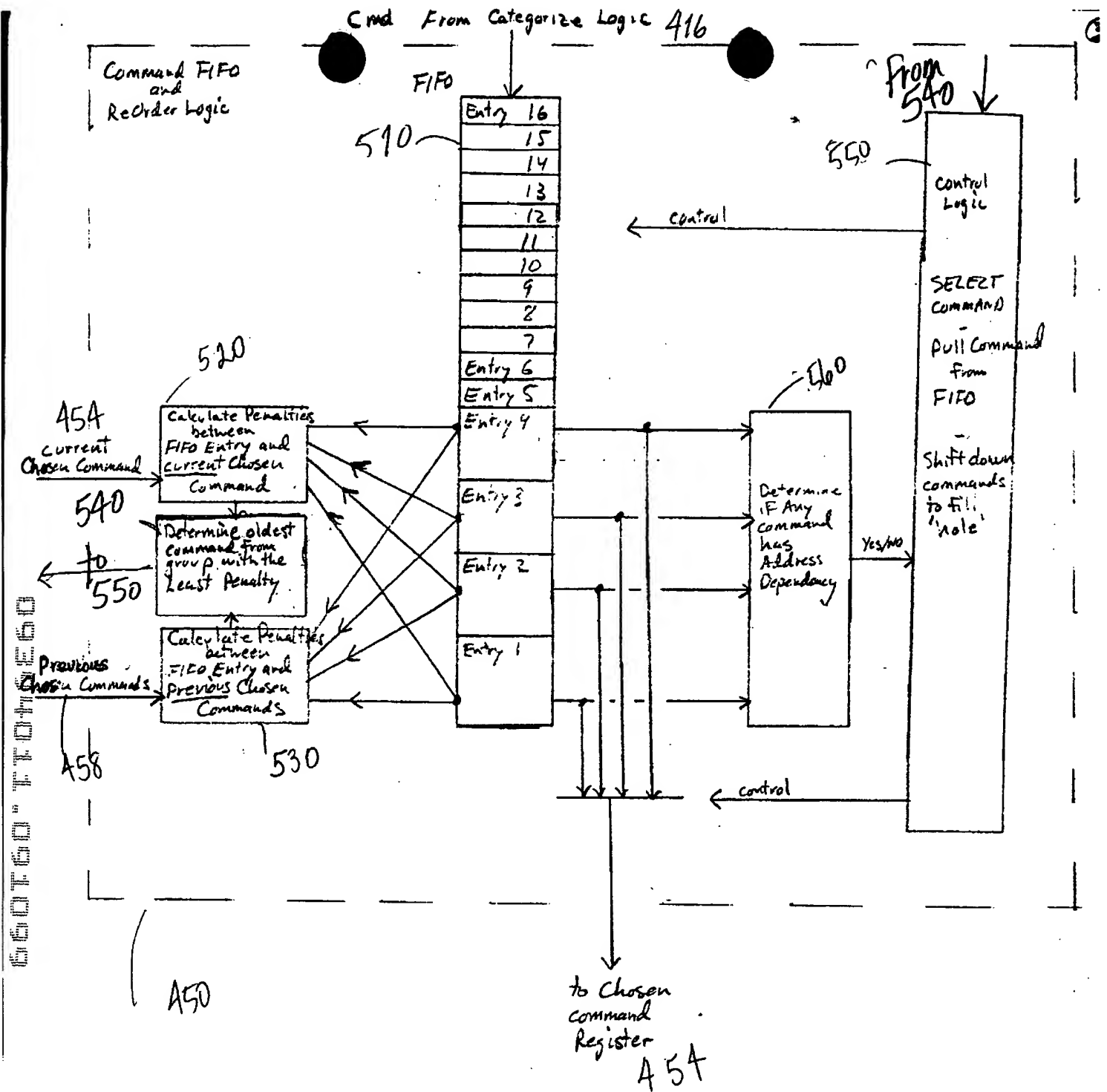
Present command
to
SDRAM CONTROL LOGIC

430

TO SDRAM CONTROL LOGIC

Figure 4
R0999-080

660160-101650



Command FIFO and ReOrdering - Flow Diagram

3

660760-104650

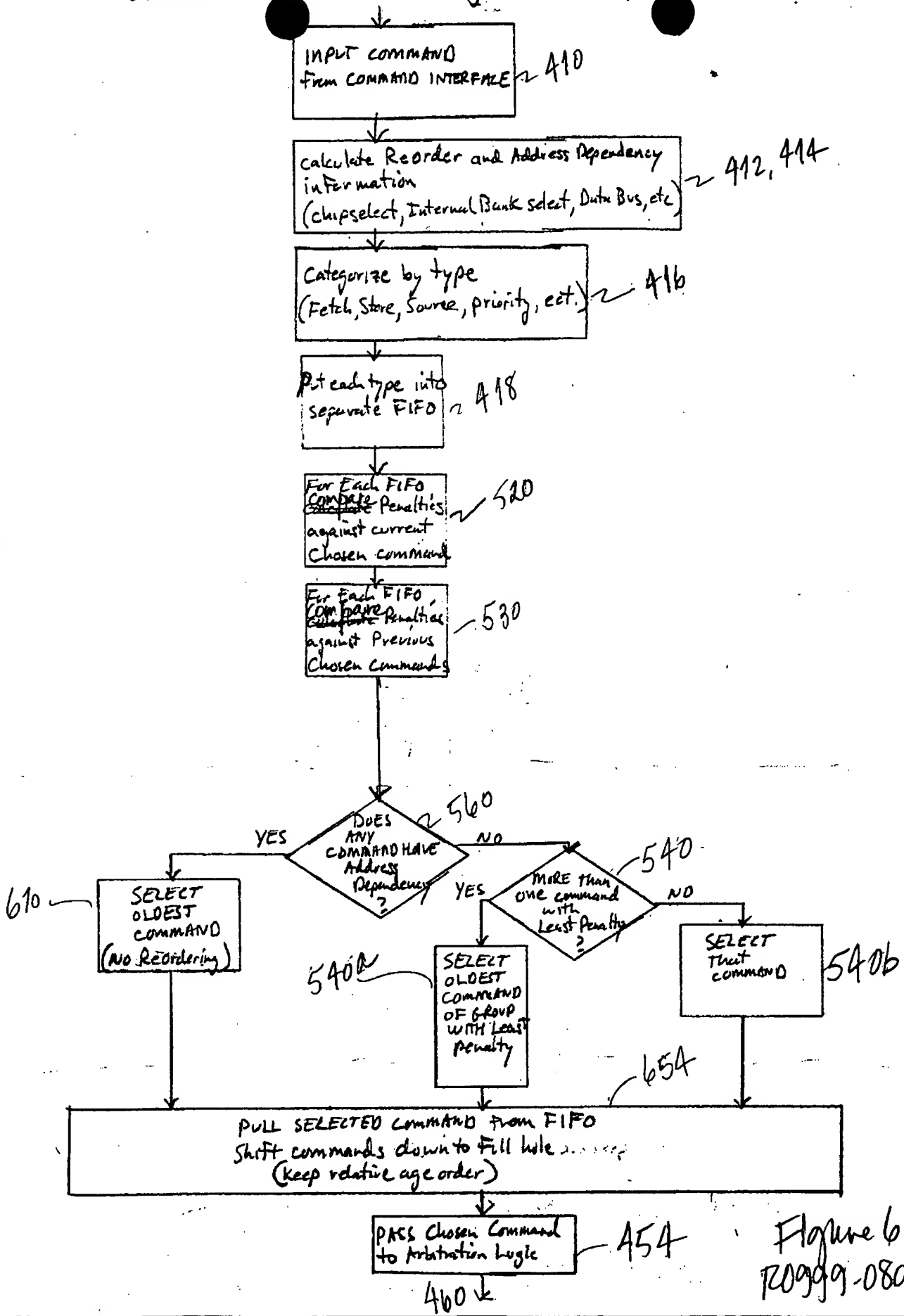


Figure 6
20999-080

660760-1046E60

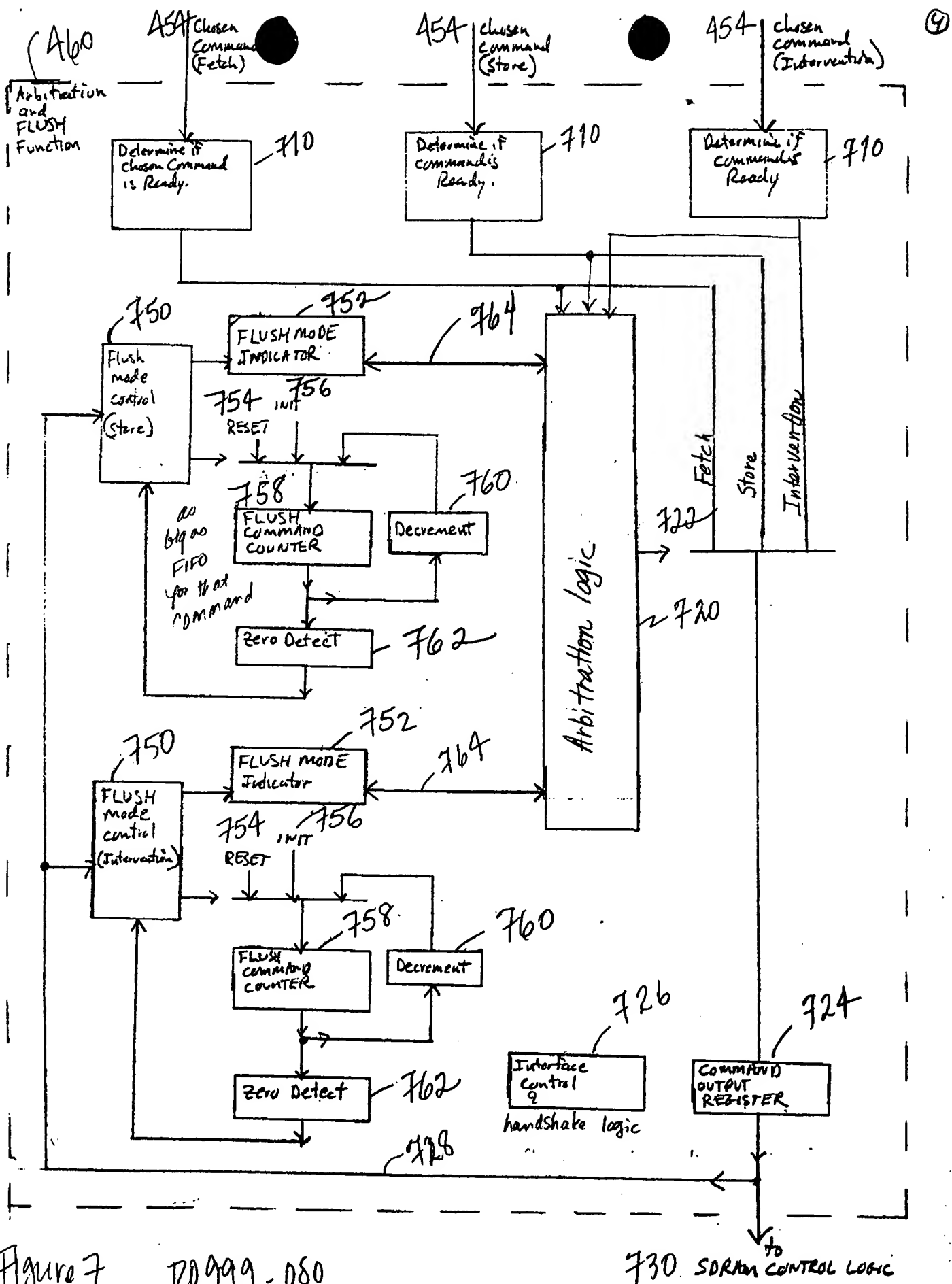
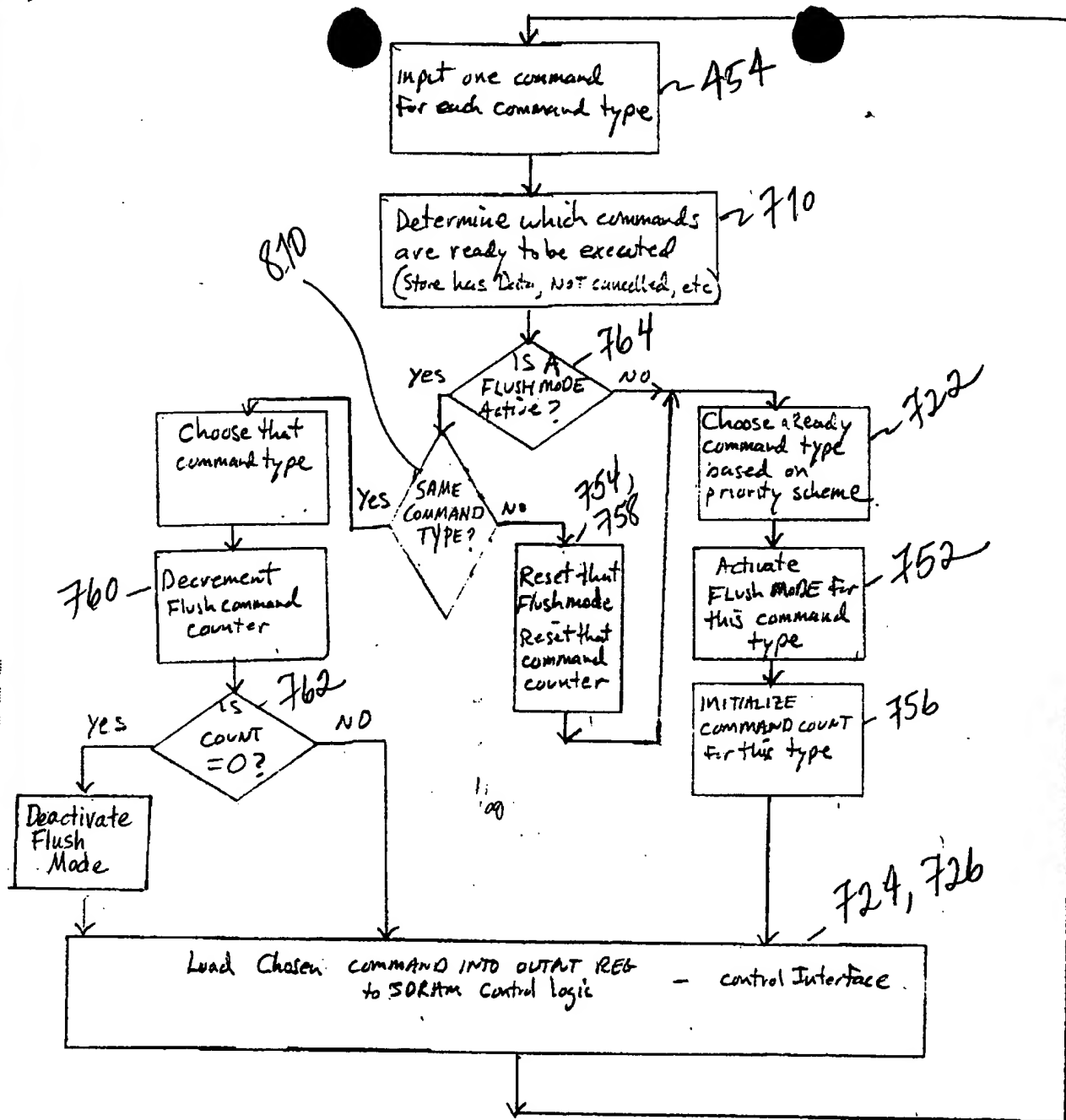


Figure 7 720999-080

730 SDRAM CONTROL LOGIC



FLUSH Function and Arbitrate Logic - Flow Diagram

Figure 8-120999-080

Possible Deadlock Condition - (Avoided by executing as FIFO)

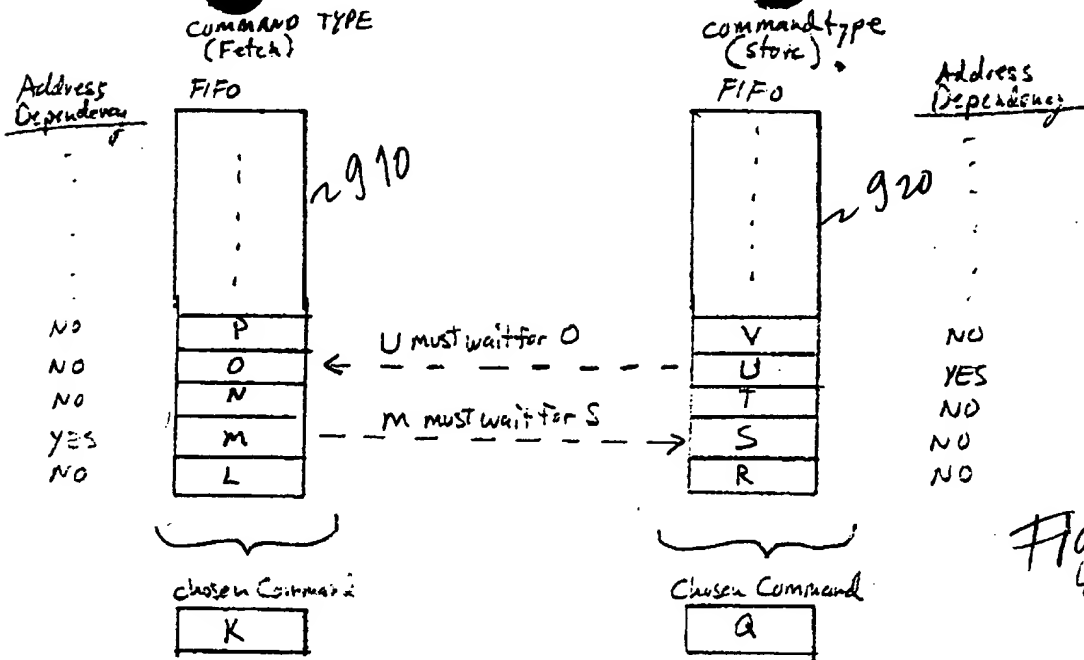


Figure 9b

- Command U address is in same cacheline as command O, and was received after command O.
- Command M address is in same cacheline as command S, and was received after command S.

* IF Commands in both FIFOs execute in order, then no deadlock.

Deadlock Condition - (Occured by ReOrdering)

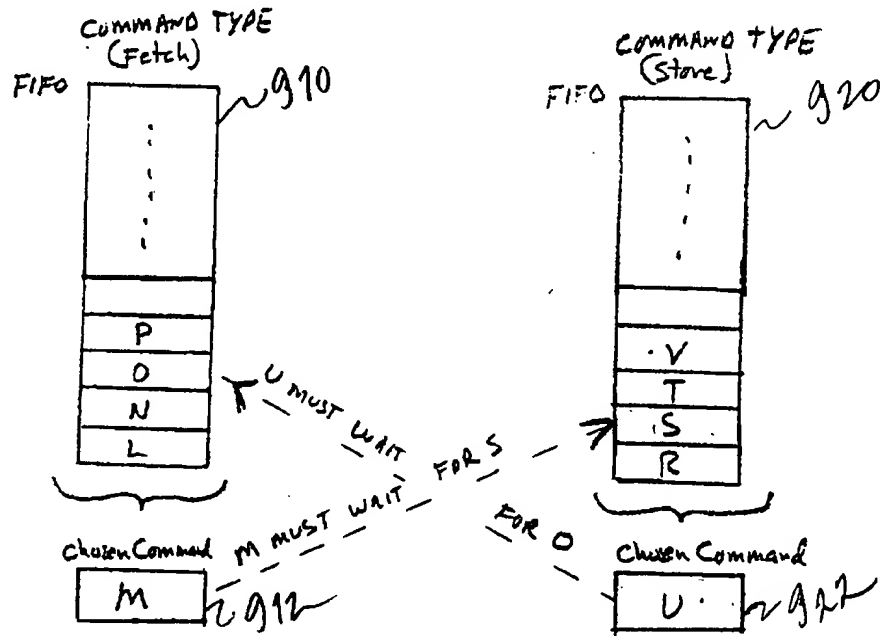


Figure 9a

- * IF certain command chosen by ReOrder Logic, then deadlock
- Key idea is to not reorder if any command being considered has an address dependency

RO999-080